

Abstract:

The present invention relates to a process for the bonding of material for the production of three-dimensional objects by means of selective heating via a laser of wavelength from 100 to 5 3000 nm. The beam spot here may be a focused or unfocused beam spot, or may indeed be spread, as is the case with the diode laser, where the bars may have a stacked arrangement. The selectivity of the melting process is achieved via the application of an absorber to certain subregions of a layer composed of a pulverulent substrate, and then heating of the absorber by means of laser radiation of wavelength from 100 to 3000 nm. The heated absorber transfers the 10 energy present therein to its surrounding pulverulent substrate, which is melted thereby and, after cooling, has firm cohesive bonding.

The process is markedly more flexible, less expensive, and faster than conventional laser sintering.